

CLAIMS

What is claimed is:

1. A turbocharger system for a combustion engine, comprising:
a turbocharger having an oil inlet configured for being coupled to a pressure side of an oiling system and an oil outlet, an exhaust inlet and outlet and an air charge inlet and outlet;
an oil pump in fluid communication with the oil outlet and configured for being in fluid communication with the oiling system;
a pressure driven check valve in fluid communication with the oil inlet to prevent oil from flowing into the turbocharger when the pressure on the pressure side of the oiling system drops below a predetermined level;
mounting hardware for mounting the turbocharger to an exhaust pipe and away from the engine and at or below the oil level of the oiling system.
2. The system of claim 1, wherein said oiling system is the oiling system of the vehicle for engine lubrication.

3. The system of claim 1, further comprising hardware for mounting the turbocharger at the location of a vehicle's existing muffler.

4. The system of claim 1, wherein an outlet of said check valve is positioned above said oil inlet of said turbocharger and an inlet of said oil pump is positioned near said oil outlet of said turbocharger.

5. The system of claim 1, further comprising an air filter coupled to the air charge inlet of the turbocharger.

6. The system of claim 5, further comprising ducting for coupling said air filter to said turbocharger at a location away from an engine compartment of the vehicle, the location being relatively isolated from road debris.

7. The system of claim 6, wherein said ducting is configured to mount said air filter in a fender well of a vehicle.

8. The system of claim 1, further comprising a wastegate coupled between an exhaust system of the vehicle at a

location before the exhaust inlet of the turbocharger and a tail pipe of the vehicle.

9. The system of claim 10, further comprising a water injection system coupled to the charge air tube for injecting water into the flow of gases exiting the turbocharger compressor to cool the charge air and combustion temperatures.

10. The system of claim 1, further comprising a wastegate control system for regulating boost pressure.

11. The system of claim 1, further comprising a pump controller for varying the speed of the pump according to engine speed.

12. A method of mounting a turbocharger to a combustion engine driven vehicle, comprising;

mounting an exhaust inlet of a turbocharger to the exhaust system of the vehicle at a location at or below the oil level of the vehicle at a remote location away from the engine compartment, the turbocharger also having an oil

inlet and an oil outlet coupled to an oil system, an exhaust outlet coupled to the exhaust of the vehicle and an air charge outlet coupled to the air intake of the vehicle and an air charge inlet; and coupling an oil pump between the oil outlet of the turbocharger and a reservoir side of an oil system.

13. The method of claim 12, further comprising removing an existing muffler from the vehicle and mounting the turbocharger in the location of the existing muffler.

14. The method of claim 12, further comprising installing a check valve between the turbocharger oil inlet and the pressure side of the engines oil system.

15. The method of claim 12, further comprising positioning an inlet to the oil pump near the oil outlet of the turbocharger.

16. The method of claim 12, further comprising coupling an air filter to the air charge inlet.

17. The method of claim 16, further comprising installing the air filter at a location away from an engine compartment of the vehicle, the location being relatively isolated from road debris.

18. The method of claim 17, wherein said location is a fender well of the vehicle.

19. The method of claim 12, further comprising coupling a wastegate between the exhaust system of the vehicle at a location before the exhaust inlet of the turbocharger and a tail pipe of the vehicle.

20. The method of claim 12, further comprising coupling a water injection system to the turbocharger for injecting water into the flow of gases exiting the turbocharger to cool the charge air and combustion temperatures.

21. The method of claim 12, further comprising providing a modified engine oil fill cap with fittings to couple to an oil return line extending between the oil pump and the fill cap.

22. The method of claim 12, further comprising providing a wastegate control system for regulating boost pressure.

23. The method of claim 12, further comprising providing a pump controller for varying the speed of the pump according to engine speed.

24. A turbocharger installation kit for combustion engine, comprising:

a turbocharger;

a pump;

first exhaust plumbing for coupling the turbocharger to an existing exhaust system of a vehicle proximate the location of an existing muffler of the vehicle;

an oil supply line for coupling to the oiling system of the vehicle;

a check valve for coupling to the oil supply line and for preventing flow of oil into the turbocharger when the engine is not running;

an oil drain line for coupling between the turbocharger and the pump;

oil return line for coupling between the pump and the oiling system of the vehicle; and

a first duct for delivering air from the turbocharger to a throttle body of the engine.

25. The kit of claim 24, further comprising second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger.

26. The kit of claim 24, further comprising mounting hardware for mounting the pump to an underside of the vehicle.

27. The kit of claim 24, further comprising an electrical harness, switch, and relay for providing variable voltage to the oil gear pump to adequately meet the varying flow requirements of the turbocharger while reducing the noise output of the gear pump when flow requirements are minimal.

28. The kit of claim 24, further comprising ducting and hardware for mounting a mass air flow sensor.

29. The kit of claim 24, further comprising pressure hose and fittings to connect the vehicle fuel pressure regulator

to the intake tube, intake manifold, or more specifically to the exhaust system between the engine and the turbocharger.

30. The kit of claim 25, wherein the second set of exhaust plumbing is configured to suspend the turbocharger

31. The kit of claim 24, further comprising an oil return coupling comprised of an engine oil fill cap with a fitting for coupling to the oil return line.

32. The kit of claim 24, further comprising an air filter for coupling to the turbocharger.

33. The kit of claim 24, further comprising a wastegate for coupling between the first exhaust plumbing and the second exhaust plumbing.

34. The kit of claim 24, further comprising a wastegate control system comprised of a switch, two-way valve, pressure regulator, wiring harness, and necessary fittings and hoses for adding regulated boost pressure to increase spring rate of wastegate, allowing the increase or decrease of boost pressure while driving said vehicle.

35. The kit of claim 24, further comprising a water injection system configured for coupling to the charge air tube for injecting water into the flow of gases exiting the turbocharger compressor to cool the intake charge and combustion temperatures.

36. The kit of claim 24, further comprising a wastegate control system for regulating boost pressure.

37. The kit of claim 24, further comprising a pump controller for varying the speed of the pump according to engine speed.